

# *A Brief Analysis of the Problems Faced by the Cooperation between Universities and Enterprises in Food Specialty and the Implementation Strategies of Reform*

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**Abstract:** The core of School-Enterprise cooperation in running a school lies in the formulation of a talent training programs, which should be based on the platform set up by School-Enterprise cooperation to build a talent training programs in line with higher vocational education; Based on the combination of work and study, the teaching system of professional skills training should be designed and implemented. This paper preliminarily analyzes the main problems and shortcomings faced by the training of application-oriented technical talents, discusses the training countermeasures of the education system of School-Enterprise cooperation in running schools, the construction methods of project-style course content and the implementation strategies of industry-university cooperation in gathering teaching resources, to provide more possibilities for the training and exploration of application-oriented technical talents in vocational universities in China.

## 1. Introduction

From the essence of vocational and technical talent training, the joint training of schools and enterprises will be the main mode of higher vocational education talent training. Looking at the world, there are some reference cases of training professional and technical talents based on the School-Enterprise cooperation model, such as the "Teaching Factory" model in Singapore, the "Work-Study Alternation" model in the United Kingdom, and the "Cooperative Education" in the United States, etc. All of them adopt the talent training method that closely combines the talent training plan of vocational universities with the employment needs of local enterprises, to establish a long-term and stable cooperative relationship. Based on mutual benefit and symbiosis, the establishment of a School-Enterprise cooperation talent training platform is the main direction of China's vocational education reform and development at the present stage. This is not only the practical need for school talent training, but also the objective need of enterprises to complete independent innovation, realize industrial upgrading, and continuously and stably increase the core competitiveness of enterprises. It is also an urgent need for higher vocational universities to improve their comprehensive school-running strength and a necessary way for vocational and technical talent training<sup>[1]</sup>. At present, the development needs of many China food enterprises are seriously decoupling from the content of vocational education and teaching, and education and

career development are not closely linked. The government and enterprises have invested a lot of energy and money but have little effect. To change this situation, the government should aim at mutualism and symbiosis between schools and enterprises, mobilize the enthusiasm of enterprises to participate in vocational education, coordinate schools and enterprises to maximize resource sharing, enhance the degree of cooperation between the two sides, make overall design, formulate periodic strategies, and set up professional teams to create customized talent training programs. To meet the requirements that students trained by higher vocational universities can be qualified for jobs upon graduation. Finally, vocational universities all over the country can provide special majors and special schools to promote local economic development according to the development needs of local enterprises<sup>[2]</sup>.

The higher vocational universities in China have followed the requirements of "Some Opinions on Comprehensively Improving the Teaching Quality of Higher Vocational Education" issued by the Ministry of Education and "The Outline of the National Plan for Medium and Long-term Education Reform and Development" issued by the state to actively promote and explore a new mode of School-Enterprise cooperation in talent training. At present, the curriculum system, teaching mode, teaching content, teaching methods, and performance assessment methods implemented by most vocational universities and universities are not well adapted to the School-Enterprise cooperative talent training mode, which hinders the promotion and implementation of the School-Enterprise joint training of applied technical talents. Therefore, It has become a hot topic in the current teaching reform of higher vocational education to study the School-Enterprise cooperative talent training mode. Taking the food specialty of the Health College of Nanchang Vocational University as an example, this paper probes into several key issues worth attention in the formulation of a talent training programs under the School-Enterprise cooperation mode<sup>[3]</sup>.

## **2. Overview of School-Enterprise cooperation**

School-Enterprise cooperation refers to the schools and enterprises jointly established cooperation mode, in the face of increasingly fierce social competition, education field for development, improve the quality of education, many universities and enterprise began to choose School-Enterprise cooperation, with pertinence and targeted for enterprise transportation and cultivate talents, make the training talents more effectiveness, practical <sup>[4]</sup>. School-Enterprise cooperation is belonging to a kind of focusing on the quality of training, paying attention to school learning and enterprise practice, and realizing the mutually beneficial and win-win model of School-Enterprise resources and information sharing type. By strengthening School-Enterprise cooperation, universities and enterprises can train professional and skilled talents according to social needs, and integrate with the market. At the same time, School-Enterprise cooperation promotes the deep combination of theory and practice, and the new educational concept throughout the whole process of education and teaching, to promote the development of the education industry.

## **3. The importance of university skill talent training based on School-Enterprise cooperation**

### **3.1 Help to promote the reform of the supply and structure of higher education**

With the continuous development of the field of higher education, the number of graduates cultivated by universities and universities continues to increase, but it still cannot meet the needs of talents put forward by social employers. The main reason for this situation is that there are structural differences between schools and enterprises in the supply and demand of talent. In this context, strengthening cooperation between universities and enterprises and focusing on the

cultivation of highly skilled talents can effectively expand the path of talent training and optimize the mode of talent training, so that college students can simultaneously learn theoretical knowledge from the beginning of enrollment until graduation and enter the workplace, enhance professional skills, and timely transform empty theories into professional qualities while learning book knowledge. By accumulating rich professional knowledge, students can continuously improve their comprehensive competitiveness and core qualities, to fully meet the talent needs of employers and meet the requirements of the reform of the supply side of higher education, to continuously improve the quality and level of talent training <sup>[5]</sup>.

### **3.2 Help to improve the employment competitiveness of college graduates**

In recent years, higher education continues to expand, and a huge number of graduates are exported to society every graduation season, which makes college graduates face a severe employment situation. There is too much employment pressure on college graduates, the fundamental reason is that graduates themselves lack enough competitiveness, and college graduates do not have good core competitiveness, the root cause is that universities and universities still adopt traditional and backward talent training modes, pay too much attention to the teaching of theoretical knowledge and neglect the training of professional skills in the process of talent education. Although most of the graduates have rich professional knowledge, they generally lack practical skills, and are difficult to adapt to the job needs efficiently. The strengthening of School-Enterprise cooperation in universities and universities can provide more opportunities and time for students to go deep into the production line, apply the theoretical knowledge they have learned to real practice promptly, promote college students to continuously improve their professional skills and hands-on ability, and make the trained highly skilled talents possess rich theoretical knowledge and superb professional skills simultaneously. Enhance the core competitiveness and job competency to ease the employment pressure on graduates <sup>[4]</sup>.

### **3.3 Provide enterprises with sufficient high-quality talents**

In the process of continuous social development, employers are in urgent need of a large number of highly skilled talents, especially in the implementation of industrial structure transformation and upgrading, supply reform, the transformation of old and new growth drivers, and other policies in China, which requires the participation of many enterprises, and many of them are seriously short of highly skilled and high-quality talents, restricted by the defect of talent structure, which hinders the sound development of enterprises. Thus, it hurts the implementation of many top-level strategies. By strengthening School-Enterprise cooperation and exporting more highly skilled and high-quality talents to enterprises and society through innovative talent training paths, universities, and universities can fully meet the needs of top talents put forward by enterprise development, and provide a lot of intellectual support for enterprises to achieve leapfrog development and implement the national top-level strategy.

## **4. Problems Faced by talent training of School-Enterprise Cooperation**

### **4.1 The training orientation is not clear enough**

It is difficult for higher vocational universities to transport high-end research-oriented talents like affiliated universities and universities. Compared with higher vocational universities and universities, there are shortcomings in the training of practical operation ability, and the emphasis on practical operational skills is not enough, which results in the current situation of talent training

in higher vocational universities. In addition, the course design of higher vocational education for food is not characteristic of the industry, and the content involved in the teaching is broad and not professional enough, resulting in unclear employment direction for students after graduation, and there is no targeted choice for enterprises when selecting talents.

At present, China's higher vocational education has just started, and the training orientation is not clear. Many universities and universities fail to provide effective career guidance to students, resulting in many students' resistance to vocational education and internship in enterprises during the study period being too large, which hinders the implementation of vocational education to a certain extent<sup>[6]</sup>. Therefore, in the process of formulating the talent training programs, both schools and enterprises need to participate in it, combine the local industrial characteristics, deepen the cooperation with local leading enterprises, determine a clear training orientation, and formulate a characteristic talent training programs in line with the school of food specialty.

#### **4.2 The practical teaching conditions are relatively backward**

Some higher vocational universities lack a team of "Dual-certificate" teachers, that is, teachers who have both a vocational skill certificate and a teacher qualification certificate, and practical teaching teachers lack working experience in enterprises, and the practical teaching content of the courses they teach is insufficient. The enterprise practice ability and industrial innovation ability of professional course teachers need to be further improved. In addition, the vocational college teacher resources are insufficient, a teacher concurrently multiple majors and classes teaching tasks, but also shouldering the pressure of scientific research, and social service pressure, so it is impossible to guarantee the quality of professional learning for each student.

According to the requirements of the Ministry of Education on talent training and teaching evaluation of higher vocational universities, vocational universities need to hire technical personnel with corresponding vocational qualification levels or higher professional levels to serve as part-time teachers to participate in the daily teaching activities of vocational universities. However, in the actual promotion, the enterprise technicians are reluctant to participate in the teaching work of universities and universities, and the part-time enterprise engineers who participate in the teaching activities fail to perform their duties well, the teaching effect is poor, the classroom discipline is loose, the atmosphere is dull, and students do not pay enough attention to the teaching courses of enterprise engineers, and the teaching tasks involved by enterprise engineers cannot be completed with quality and quantity. In addition, the teaching content of the school is relatively old, the practical teaching equipment is old, and the development of the actual enterprise is not synchronized, even if the students who have excellent study in school need to continue to study after graduation into the enterprise, otherwise they cannot reach the training standard of employment after graduation. Finally, experimental instruments, equipment, venues, and so on are very limited, often many students share a set of experimental instruments, practice teaching effect is not ideal<sup>[5]</sup>.

#### **4.3 School-Enterprise cooperation is not deep enough**

The combination of work and learning in higher vocational education runs through the whole process of talent training and is based on School-Enterprise cooperation. The depth and breadth of School-Enterprise cooperation determine the degree and quality of the combination of work and learning. At the same time, as a type of higher education that is most closely and directly related to the social economy, higher vocational education must cooperate closely with industrial enterprises and form positive interaction with local social and economic development to realize the functions of talent training, lifelong education, technological innovation, and social service. However, from the

perspective of practical results, there are still major deficiencies.

First of all, the School-Enterprise cooperation of some higher vocational universities is merely a formality, lacking substantive operation and management of off-campus practice bases, and lacking scientific and planning in selecting School-Enterprise cooperation objects. The enterprises cooperating with them do not have local industrial characteristics and lack leading enterprises as support. The cooperation mode mostly stays at the superficial level of employee training, student visits, regular discussions, and so on, which makes it difficult for students to integrate into the corporate culture, and enterprises cannot have a deep understanding of students. Secondly, the School-Enterprise cooperation has not reached the common development goal, and the cooperation between the two sides is just a simple business model, far from reaching the state of common development and prosperity. In the history of School-Enterprise cooperation, few successful precedents can be used for reference. Some vocational universities at home and abroad are trying, and the problems involved in different regions and different industries are different. Some large industry giants may need few vocational skills and have high requirements for their professionalism and technology, and the unified training mode of schools cannot well meet their needs. Some small and medium-sized food enterprises, due to their small scale and limited development, do not need too many food professionals, and even some enterprises recruit some non-professionals from the labour market for short-term training directly. Small and medium-sized enterprises have low demand for professional food talents from vocational universities and are reluctant to participate in the alliance of School-Enterprise joint training of professional and technical talents. A series of problems have hindered the work of School-Enterprise cooperation in training professional and technical talents<sup>[6]</sup>. Finally, a considerable number of enterprises are more inclined to join hands with excellent enterprises in the industry to seek greater benefits and are unwilling to spend longer time and more funds on student training. Enterprises usually do not set up professional courses and provide special time for these students to learn, but adopt a unified brief induction training directly after the job, and do not regularly rotate positions for some experienced technicians to improve the skills of students. The content and depth of the internship are far from the standard of training talents. The coupling effect of many factors eventually leads to the failure of School-Enterprise cooperation to reach a certain depth<sup>[7]</sup>.

## **5. The implementation plan of food professional training reform under School-Enterprise cooperation**

### **5.1 Education system training countermeasures**

#### **5.1.1 Reform of enterprises and higher vocational universities**

Both schools and enterprises need to start from the nature of vocational education, examine their respective social responsibilities, and carry out necessary reforms according to their actual conditions, to lay a solid foundation for the training of vocational and technical personnel.

First of all, enterprises should have a sense of responsibility to participate in the process of talent training and select part of the trained professional and technical talents to enter the enterprise internship, to improve the upgrading of enterprise structure, make up for the demand for professional and technical talents, and finally realize the scientific and technological power provided by professional and technical talents to promote industrial upgrading. Secondly, higher vocational universities also need to adjust the course structure, course content, and teaching points and difficulties according to the needs of the market and enterprises. The talent training goal of vocational universities is to train application-oriented technical talents to become employees with both high skill levels and high cultural accomplishment. This requires vocational universities to



teach in different directions and levels according to the actual production of enterprises and increase the application and practicality of food professional skills so that students can smoothly transition from school to enterprise, and contribute their strength to the development of enterprises while improving their abilities. Finally, teachers of higher vocational universities should also give play to their advantages, more linkage with enterprises, according to their years of teaching experience for enterprise employees to carry out corporate culture education, popular science some of the latest and most cutting-edge new technology, new technology to deepen School-Enterprise cooperation.

### **5.1.2 Joint enrollment construction and order-type training**

Vocational universities shall determine the type of enrollment and enroll the targeted students jointly trained by enterprises and sign training agreements, specify the responsibilities and obligations that enterprises, schools, and students need to fulfill, and specify the treatment plan for each party's breach of contract due to unilateral reasons, to safeguard the rights and interests of all parties and urge all parties to fulfill their obligations. Finally, the school, students, and enterprises achieve the mutual benefit of the three parties of the win-win-win mode of education.

The school and the enterprise jointly build the campus and off-campus experimental training bases according to their resources. The enterprise can transfer part of its business to the school's practical training base, and the students of the order class can complete the business orders of the company so that the students can quickly grasp the skills and knowledge required by the enterprise. When the students of the order class enter the internship period, they can directly enter the enterprise, learn about the development of the enterprise in advance, and practice the skills they have learned in school. To complete the training of talents with high quality and high efficiency. In addition, we should also pay attention to the integration of cultivating students' craftsman spirit, professional quality, and corporate culture, to cultivate three students with ideals, ability, and ethics.

## **5.2 Construction method of project-style course content**

### **5.2.1 School-Enterprise joint development of food professional talent training programs**

First of all, the government shall coordinate and organize schools and enterprises to conduct targeted field research on local industrial needs and economic development, invite high-skilled experts from enterprises and professors from higher vocational universities to form a professional teaching steering committee, revise and adjust the talent training programs from time to time, and timely improve the talent training programs according to changes in the future development trend of the industry. Gradually compile the teaching materials of the core courses suitable for the program; Then according to the promotion of enterprise employees and the employment situation of food graduates, the food professional talent training plan also needs to increase the factors to improve the competitiveness of both sides, according to the Ministry of Education, the National Development and Reform Commission, the Ministry of Finance and the General Administration of Market Supervision jointly issued the "on the implementation of the" academic certificate + several vocational skill level certificate "system pilot program". During the order-type talent training period, the acquisition of food professional-related vocational qualification certificates must be arranged into the daily teaching tasks, and enterprises can also formulate standards according to their own needs to promote students to improve their own knowledge and skill level during the study. Finally, complete the perfect connection between education and teaching and production practice, and truly achieve the integration of production and education, which meets the requirements of the state for vocational education and conforms to the needs of social development enterprises. Finally, some cooperation strategies on research topics can be appropriately added to the talent training programs,

to promote joint research and discussion between schools and enterprises on the actual scientific and technological problems encountered in the production process, drive students to participate in the training of students' comprehensive quality and innovation level and cultivate talents with practical ability and innovative spirit.

### **5.3 Implementation strategies of industry-university cooperation to gather teaching resources**

#### **5.3.1 School-Enterprise cooperation to jointly strengthen the construction of teaching staff**

The construction of teaching staff is a key step to the completion of School-Enterprise cooperation in running schools. At present, teachers in China higher vocational universities usually lack practical experience in enterprises, and there is a serious shortage of professors and doctoral supervisors with high degrees and qualifications, resulting in the lack of a close connection between the course content received and the actual production of enterprises. Vocational universities should adhere to the teaching concept based on the level of practical operation skills, encourage school teachers to visit and study in enterprises, participate in the actual production of enterprises, and promote teachers to the important and difficult points in the teaching process more accurately. Schools should make agreements with teachers of specialized courses, and arrange for teachers to go to factories to study and discuss new technologies and new processes with enterprises. After years of training and learning, food teachers returned to the classroom to drive the overall development and construction of the school. At the same time, the enterprise needs to select employees with corresponding vocational and technical qualification certificates or vocational skill levels to reach a certain standard to enter the school as part-time teachers, to assist in completing part of the teaching tasks, and can also guide the students of the order class to complete the production tasks of the enterprise<sup>[8]</sup>. Finally, enrich and expand the teaching staff of food professional teaching teams in higher vocational universities, and comprehensively improve the training quality of food professional skills talents.

## **6. The construction of School-Enterprise cooperation education training implementation plan and strategy**

### **6.1 Support system construction**

School-Enterprise cooperation in running schools covers schools and enterprises, as well as the industrial market, individual students, the labor market, and other stakeholders. In the construction process, it is necessary to coordinate the interests of all parties and comprehensively consider various factors, so it is easy to have problems in the concrete implementation process. Only through multi-party investigation and consultation, and timely and effective communication between all parties, can we build a set of supporting cooperation system that conforms to the local, the university, and the industry, take into account the rights and interests of all parties, and finally realize the beautiful vision of all parties working together for common progress, common development, and win-win cooperation.

The construction of a School-Enterprise cooperation support system requires school teachers and enterprise technicians to cooperate to complete teaching tasks, share teaching resources, and joint research and implement practical technology and education topics. The courses in the school mainly take the form of combining theory teaching and field practice teaching. School teachers play the leading role, and enterprise technicians assist in teaching implementation and assessment. The courses in the enterprise mainly adopt the form of School-Enterprise technicians leading drills and guidance and school teachers cooperating with management to strengthen the apprentice's

on-the-job practical operation ability, improve the apprentice's professional quality and cultivate the apprentice's professional quality awareness. This requires students to conscientiously complete the basic theoretical knowledge learning and routine skills training as students in the school, and grasp the necessary basic professional theories and technologies. Work as an apprentice in an enterprise, carefully master the demonstration skills and vocational guidance that you have mastered, master relevant professional practical skills, and accumulate practical work experience.

## **6.2 Build a School-Enterprise interaction mechanism**

School-Enterprise interactive education system can consider establishing School-Enterprise mutual employment and evaluation mechanism, that is, establishing teacher workstations in enterprises to employ school teachers as part-time employees, and school teachers to conduct short-term training in enterprises so that teachers can timely understand the knowledge and skills required for the production of enterprises, and enrich the work experience of school teachers in enterprises to effectively the key points, difficulties and points in the teaching process. In the end, the enterprise technicians evaluate the school teachers' guidance to students during the apprenticeship period. At the same time, the school set up a technician workstation, select the enterprise with the corresponding qualification or with the corresponding mastery of the skill level to receive professional teaching skills training as the school part-time teachers, to be able to guide the apprentice to carry out a clear and effective demonstration process, and finally the school teachers evaluate the enterprise technician's guidance to the students during the apprenticeship. Students' performance evaluation needs comprehensive evaluation, carried out in the way of "theoretical teaching evaluation + actual production evaluation + ability assessment evaluation". The theoretical teaching evaluation is to evaluate the learning situation of the students in the school and the enterprise respectively by the school teachers and the enterprise technicians according to the customized personal training plan. The actual production evaluation is supplemented by the enterprise evaluation, which mainly involves the completion of work tasks, including team spirit, craftsman spirit, professional ability, professional level, professional ethics, and the ability to solve practical problems. The ability evaluation is that the trainees participate in the relevant vocational qualification assessment and obtain the corresponding level of vocational qualification certificate.

## **6.3 Building School-Enterprise cooperation mode under School-Enterprise cooperation**

To sum up, the School-Enterprise cooperation talent training mode of the food major of Nanchang Vocational University will adopt a group of students two-point teaching, that is, students receive guidance and training in two places of "school and enterprise"; Phased learning and phased teaching, the three years in school are divided into three progressive stages: "School admission, Operation-practicice and Enter the workplace"; the factory training stage is divided into "Enter the enterprise, Enter the industry and Enter the workplace". Three kinds of apprenticeship systems are adopted both inside and outside the school, namely, "The first division guides many students, Excellent apprentices guide other apprentices, The apprentices guide each other in learning", forming an education mode integrating industry and education, and realizing the gradual four-one school-enterprise cooperation talent training mode of "Student→Apprentices→Prospective employee→Employees". According to the above discussion and the characteristics of the food specialty, we have developed a set of human training model conforming to the school-enterprise cooperation model, which is as Figure 1:



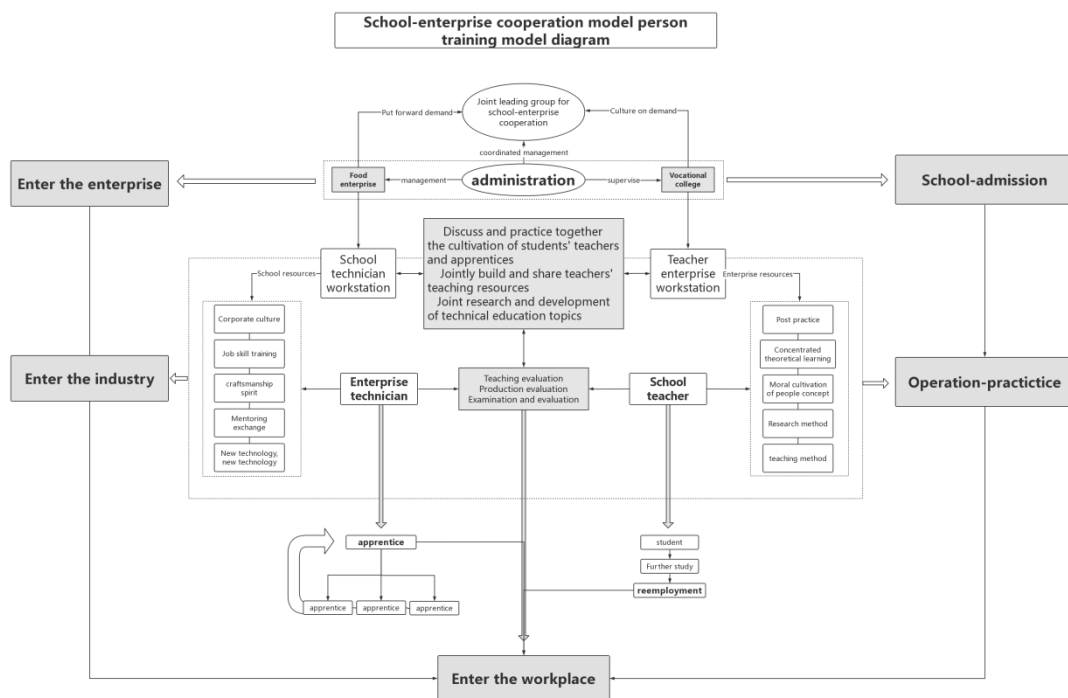


Figure 1: The School-Enterprise cooperation model of modern apprenticeship

## 7. Conclusion

Through the cooperation between higher vocational colleges and enterprises, it perfectly conforms to the training goal of vocational and technical personnel combining theory and practice, realizes the return of the essence of vocational education, provides a platform for food professionals to practice in practice, and creates an opportunity for students to understand the needs of enterprises for skills and knowledge in advance, so as to practice their own skills more pertinently and purposefully. Enhancing professionalism and skills can achieve the goal of training students after graduation and at the same time save the cost of training new employees for enterprises to truly develop in the direction of integration of production and education.

To solve the problem of student employment is not the ultimate goal of school-enterprise cooperation in running schools, but to cultivate batches of professional talents with high knowledge level and certain practical skills, to realize the upgrading and adjustment of industrial structure, and it is the ultimate goal to improve the level of regional economic development. The cooperation between higher vocational universities and enterprises gives play to their respective advantages to build a talent training base, share resources, and complement each other to train food professional talents, which is conducive to the reform and development of both sides and jointly promotes the improvement of industrial structure. More importantly, students can understand the development needs and production conditions of enterprises in advance, and cultivate their skills with a purpose. Improve the level of professional knowledge and practical skills. Therefore, it is the main direction of vocational education reform and development in China at the present stage. It is not only the realistic need for schools to improve their comprehensive school-running strength, but also the objective demand for enterprises to complete independent innovation, realize industrial upgrading, and continuously and stably increase the core competitiveness of enterprises. It is also the only way for vocational and technical talent training.

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